

In the Claims

1-39 (canceled).

40 (new). A set of materials comprising two separate compositions of matter, wherein:

a) the first composition of matter is a sample comprising an analyte and an undesired constituent, wherein the analyte is a polynucleotide, and the undesired constituent is selected from a nucleotide, an anionic detergent or a chelator; and

b) the second composition of matter is a material comprising a composition comprising a solid phase that is coated with polynucleotides at least 20 nucleotides in length, wherein the solid phase binds the undesired constituent and the polynucleotide coating covers the exposed surface of the solid phase to an extent that any binding of the solid phase to the analyte is impeded, wherein the sample and the second material are not in contact with each other.

41 (new). The set of materials according to claim 40, wherein:

a) more than 90% of the undesired constituent binds the solid phase; and

b) less than 10% analyte binds the solid phase.

42 (new). The set of materials according to claim 40, wherein the solid phase comprises agarose, acrylamide, polyethylene, polycarbonate, polypropylene, polystyrene, acrylic, quartz, rubber, polyester, polyvinyl chloride, polyurethane, nylon, nitrocellulose, glass, hydroxylapatite, fluorapatite, silica, a metal, a metal salt or a metal oxide.

43 (new). The set of materials according to claim 42, wherein said metal or the metal present in said metal salt or metal oxide is calcium, iron, chromium, gallium, germanium, lithium, magnesium, manganese, palladium, cesium, tungsten, selenium, tin, vanadium, molybdenum, nickel, copper, zinc, aluminum, silver, gold, platinum or lead.

44 (new). The set of materials according to claim 40, wherein the undesired constituent is a chelator.

45 (new). The set of materials according to claim 40, wherein the solid phase further comprises a magnetic component.

46 (new). The set of materials according to claim 45, wherein the solid phase is magnetic hydroxylapatite.

47 (new). The set of materials according to claim 40, wherein the solid phase is in the form of a bead, particle, sheet, gel, powder, filter or membrane.

48 (new). The set of materials according to claim 40, wherein the coating of polynucleotides is attached to the surface of the solid phase by covalent interactions, ionic interactions, encapsulation coating, adsorption, absorption, affinity or hydrophobic interactions.

49 (new). The set of materials according to claim 48, wherein the solid phase is coated with an oligonucleotide or polynucleotide.

50 (new). The set of materials according to claim 49, wherein the oligonucleotide or polynucleotide is a single, double or triple stranded RNA molecule.

51 (new). The set of materials according to claim 50, wherein the single, double or triple stranded RNA molecule is an RNA homopolymer, *in vitro* transcribed RNA, total RNA, rRNA, tRNA or mRNA.

52 (new). The set of materials according to claim 49, wherein the oligonucleotide or polynucleotide is a single, double or triple stranded DNA molecule.

53 (new). The set of materials according to claim 52, wherein the single, double or triple stranded DNA molecule is a DNA homopolymer, synthetic DNA, prokaryotic or eukaryotic genomic DNA, phage DNA, viral DNA or mitochondrial DNA molecules.

54 (new). The set of materials according to claim 49, wherein the oligonucleotide or polynucleotide is cross linked.

55 (new). The set of materials according to claim 49, wherein the solid phase comprises magnetic hydroxylapatite and the surface treatment material consists of polynucleotides having at least 20 nucleotides.

56 (new). The set of materials according to claim 55, wherein the surface treatment material consists of polynucleotides having at least 50 nucleotides.

57 (new). The set of materials according to claim 40, wherein said analyte is DNA.

58 (new). The set of materials according to claim 40, wherein said solid phase is coated with polynucleotides at a density sufficient to at least cover, in its entirety, the underlying surface phase.

59 (withdrawn-new). A method of binding an undesired constituent to a solid phase comprising mixing the set of materials of claim 40 and allowing said undesired constituent to bind to the coated solid phase.

60 (withdrawn-new). The method according to claim 59, further comprising separating the analyte from said undesired constituent.